

as "the offering of telecommunications for a fee directly to the public . . . regardless of the facilities used."¹¹⁸ With the exception of single-party service and touch-tone dialing, the core services proposed in the NPRM represent functionalities or applications associated with the provision of access to the public network, rather than tariffed services. The Joint Board concludes that defining telecommunications services in a functional sense, rather than on the basis of tariffed services alone, is consistent with the intent of section 254(c)(1). First, a functionalities approach to defining universal service will be more flexible than a services-only approach, particularly with respect to anticipated technological and marketplace changes and evolutions. Second, a functionalities approach is consistent with the overarching goal of the 1996 Act of encouraging competition, since it is technology neutral. Thus, we recommend that for purposes of defining universal service, "telecommunications services" should not be limited to tariffed services, but instead also should include functionalities and applications associated with the provision of services.¹¹⁹

46. Based on the overwhelming support in the record, the Joint Board recommends that the services proposed in the NPRM should be included in the general definition of services supported under section 254(c)(1). We conclude that providing universal service support for each of these services, or access to the services, where applicable, is consistent with the statutory guidelines set forth in the 1996 Act. We reject the arguments of commenters that a service must meet all of the statutory criteria of section 254(c)(1)(A)-(D) before it may be included within the definition of universal service.¹²⁰ Instead, we conclude that while the Joint Board must consider all four criteria before determining that a service or functionality should be included, we need not find that a particular service meets each of the four criteria. Accordingly, we recommend that single-party service, voice grade access to the public switched telephone network (PTSN), DTMF or its functional digital equivalent,¹²¹ access to emergency services and access to operator services be designated for universal service support pursuant to section 254(c)(1).

47. We conclude that single-party service is widely available and subscribed to by a majority of residential customers. In addition, we find that single-party service is essential to public health and safety in that it, among other things, allows access to emergency services without delay. Furthermore, single-party service is consistent with the public interest, convenience and necessity. Therefore, the Joint Board recommends that single-party service should receive universal service support. We further find that single-party service means that

¹¹⁸ 47 U.S.C. § 153(46).

¹¹⁹ For discussion purposes, we hereafter refer to these functionalities and applications as "services."

¹²⁰ See, e.g., Georgia PSC comments at 6; NCTA comments at 4; USTA comments at 5.

¹²¹ See *infra* para. 23.

only one customer will be served by each subscriber loop or access line, although carriers may offer consumers the choice of multi-party service in addition to single-party service and remain eligible for universal service support. In addition, to the extent that wireless providers use spectrum shared among users to provide service, we find that wireless carriers provide the equivalent of single-party service since users are given a dedicated channel for each transmission.¹²² Moreover, we recommend permitting a transition period for carriers to make upgrades to provide single-party service, but only to the extent carriers can meet a heavy burden that such a transition period is necessary and in the public interest. Since state commissions will be responsible for designating carriers as eligible for purpose of receiving federal universal service support,¹²³ we recommend that states make the determination as to the need for a transition period for a particular carrier.

48. We find that the record provides ample support for our conclusion that voice grade access, an essential element to telephone service, is subscribed to by a substantial majority of residential customers and is being deployed in public telecommunications networks by telecommunications carriers. In addition, we find that voice grade access should occur in the frequency range between approximately 500 Hertz and 4,000 Hertz, for a bandwidth of approximately 3,500 Hertz. Because we find that voice grade access should be defined within this range, we decline to adopt the sliding scale approach, which would base an eligible carrier's support amount on the bandwidth offered by the carrier, as advocated by Alliance for Public Technology. Voice grade access should also include the ability to place calls, including the ability to signal the network that the caller wishes to place a call, and the ability to receive calls, including the ability to signal the called party that there is an incoming call.¹²⁴

49. Based on strong support in the record, we also recommend including a local usage component within the definition of voice grade access. The record suggests that local usage is essential to realizing the full benefits of voice grade access. We conclude that the states are best positioned to determine the local usage component that represents affordable service within their jurisdictions.¹²⁵ Nonetheless, for purposes of determining the amount of federal universal service support, we recommend that the Commission determine a level of local usage.

¹²² Wireless carriers are not, however, required to provide a single channel dedicated to a particular user at all times; a wireless carrier provides the equivalent of single-party service when it provides a dedicated message path for the length of a user's particular transmission.

¹²³ See *infra* section VI for a discussion of carriers eligible for universal service support.

¹²⁴ We explicitly do not include call waiting within this definition.

¹²⁵ See *infra* section V for a discussion of affordability.

50. We agree with commenters who argue that "touch-tone" is more appropriately termed DTMF signaling. DTMF facilitates the transportation of signaling through the network. DTMF also accelerates call set-up time. As noted in the NPRM, other methods of signaling, such as digital signaling, can provide network benefits equivalent to that of DTMF.¹²⁶ Therefore, we recommend that DTMF or its functional digital equivalent (hereinafter referred to as "DTMF") be supported under section 254(c)(1). We find that the network benefits that emanate from DTMF or its equivalent, particularly rapid call set-up time, are essential to a modern telecommunications system. In addition, we find that supporting DTMF is competitively neutral, consistent with our recommended principle. We note that various wireless carriers favor inclusion of "touch-tone" within the general definition of universal service.¹²⁷

51. Like the other core services, access to emergency service is a functionality that is widely deployed and subscribed to by a majority of residential subscribers. Further, access to emergency service is widely recognized as "essential to . . . public safety." In defining access, the record supports the inclusion of access to 911. Nearly 90 percent of lines today have access to 911 capability. In addition, we recommend *access to* E911 service, where the locality has chosen to implement that service, be included in the definition of universal service. We do not recommend providing universal service support, however, for E911 service itself. As in the case of regular 911 service, the telecommunications network is only one component of E911 service; local governments provide the PSAP. E911 facilitates the determination of the location of the calling party, but wireless carriers are not currently capable of providing E911 service. The Commission has directed cellular, broadband Personal Communications Service (PCS) and certain Specialized Mobile Radio (SMR) carriers to provide E911 service, but the requirement will not be effective for five years because such a requirement will compel these wireless carriers to make technical upgrades before they will be able to offer E911.¹²⁸ Therefore, requiring carriers to provide E911 would presently exclude all wireless carriers from eligibility to be "eligible telecommunications carriers,"¹²⁹ contrary to the principle that universal service be competitively neutral. Accordingly, we

¹²⁶ NPRM at para. 19 n.53.

¹²⁷ See, e.g., PCIA comments at 14 n.38 (stating "PCIA [concurs] with the Commission's assessment that touch tone service is one of the elements that should be supported by the universal service plan. The Commission correctly points out that touch tone is increasingly essential to completing telecommunications transactions. This is certainly true in connection with the delivery of messages to a messaging service subscriber."); 360 comments at 3; Comnet Cellular reply comments at 8.

¹²⁸ See *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, Report and Order and Further Notice of Proposed Rulemaking, FCC 96-264 (rel. July 26, 1996).

¹²⁹ See *infra* section VI for a discussion of eligibility.

recommend not including E911 service within the definition of services to be supported at this time, but may recommend its consideration when the definition is revisited, as anticipated by section 254(c)(2). Nevertheless, we recommend supporting *access to* E911, in addition to access to 911 and other emergency services, when a local community requests that a carrier provide such access.¹³⁰

52. The record provides support for our conclusion that access to operator service is widely deployed and used by a majority of residential customers. Access to operator service is essential in public health and safety emergencies. In supporting this functionality, we recommend that the Commission adopt the definition of operator services it implemented for purposes of section 251(b)(3), namely, "any automatic or live assistance to a consumer to arrange for billing or completion, or both, of a telephone call."¹³¹ We note that the Commission has recently implemented rules to ensure that LECs permit nondiscriminatory access to operator services by competing providers.¹³²

53. There is no evidence in the record to suggest that any one of these services will create a barrier to entry for potential new competing carriers if it is included in the definition of universal service. One of the explicit goals of the 1996 Act is a "pro-competitive" national telecommunications policy.¹³³ We find that including these services within the definition of universal service will not erect technical barriers that would prevent wireless and other telecommunications carriers from competing. In fact, two wireless providers, Commnet Cellular and 360, assert that each of the services proposed in the NPRM can be provided by wireless carriers. We find Western's argument regarding wireless carriers' inability to provide dialtone to be immaterial because, as discussed *infra*, we recommend that the definition of voice grade access not require the provision of dialtone. Further, we find no merit in Georgia PUC's assertion that the Commission is prohibited from providing universal service support for cellular service, as this prohibition is neither a provision of the 1996 Act, nor consistent with the 1996 Act's pro-competitive principle. Indeed, cellular service falls within the

¹³⁰ See discussion of services supported but not mandated, *infra*.

¹³¹ *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, *Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket No. 95-185, Second Report and Order and Memorandum Opinion and Order, FCC 96-333 (rel. Sept. 6, 1996) (*Local Competition Second Report and Order*).

¹³² *Id.* at paras. 114-137.

¹³³ Joint Explanatory Statement at 113.

definition of telecommunications services¹³⁴ and section 254(c)(1) specifically requires this Joint Board to recommend telecommunications services for which support will be provided.¹³⁵

C. Other Services

1. Background

54. The NPRM asked whether, consistent with the criteria enumerated in section 254(c)(1), support should be available for services besides those proposed in the NPRM.¹³⁶ Specifically, the NPRM, noting the directive of section 254(b)(3) relating to "access to . . . interexchange services," sought comment on whether access to interexchange service, i.e., the ability to originate and receive toll calls, should be supported.¹³⁷ The NPRM also requested comment on whether services such as relay services, directory listings, and equal access to interexchange carriers, i.e., the ability to access the long distance carrier to which a customer is presubscribed by dialing a 1+ number, should be supported.¹³⁸ In addition, the NPRM requested comment on whether advanced services, for example Internet access, data transmission capability, optional SS7 features or blocking of such features, enhanced services, and broadband services warrant inclusion, now or in the future, in the list of services supported by the federal universal service fund.¹³⁹

2. Comments

55. Expanding the Definition of Universal Service. Several commenters oppose expanding the definition of services to be supported under section 254(c)(1) beyond those services proposed in the NPRM.¹⁴⁰ A few parties advocate permitting the selection of services by consumers in the marketplace to dictate whether and when the definition of universal

¹³⁴ 47 U.S.C. § 153(46) (stating that "[t]he term 'telecommunications service' means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used").

¹³⁵ See 47 U.S.C. § 254(c)(1).

¹³⁶ NPRM at paras. 17, 23.

¹³⁷ NPRM at para. 23.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ See, e.g., CSE Foundation comments at 6; DCA comments at 22; ITA/EMA comments at 5; MCI comments at 9; Sprint comments at 7-8; Citizens Utilities further comments at 5.

service evolves to include additional services.¹⁴¹ Some parties cite as arguments against expanding supported services beyond the services proposed in the NPRM the goals of limiting the amount of contribution needed to support universal service¹⁴² and ensuring the quality and availability of services currently offered.¹⁴³ Ad Hoc Telecom. Users maintains that advanced services should not be supported because they are neither subscribed to by a majority of subscribers nor necessary for health or safety.¹⁴⁴ MCI asserts that other services should be supported only if, after analyzing the cost of the service and the effect of the support on the demand for the service, the subscribership benefit of the service exceeds the cost of the reduced subscribership of the subsidizing service.¹⁴⁵ NARUC contends that the definition of supported services should evolve over time to meet expanding needs and that states must be able to develop and refine universal service policies to meet the needs of subscribers within their jurisdictions.¹⁴⁶

56. As discussed in the following paragraphs, many parties, however, recommend expanding the definition of services to be supported beyond the services proposed in the NPRM and suggest a wide range of other services.¹⁴⁷ According to GVNW, the services proposed in the NPRM will provide nothing more than "plain old telephone service."¹⁴⁸ In addition, Wyoming PSC asserts that providing universal service support for additional services will enhance the viability of rural states which, it states, have become "increasingly reliant on the deployment of modern telecommunications technology for economic growth."¹⁴⁹

57. Access to Interexchange Service. Many commenters favor providing support

¹⁴¹ AARP comments at 11; SWBT comments at 9 (asserting that customer demand, marketplace acceptance and deployment of costs should be considered). U S West comments at 6 (urging that "high-market-penetration level" and "a net benefit to society from providing the service universally" should determine whether additional service are supported).

¹⁴² See, e.g., Washington UTC comments at 9; CSE Foundation reply comments at 4.

¹⁴³ Nat'l Retail Fed. comments at 2.

¹⁴⁴ Ad Hoc Telecom. Users comments at 4.

¹⁴⁵ MCI comments at 8-9.

¹⁴⁶ NARUC comments at 11.

¹⁴⁷ See, e.g., AARP comments at 10; Cincinnati Bell comments at 4; Farmers Tel. comments at 2-3; Michigan Consumer Federation comments at 20-21; Minnesota Indep. Coalition comments at 9.

¹⁴⁸ GVNW reply comments at 7-8.

¹⁴⁹ Wyoming PSC comments at 8. See also Alaska PSC comments at 3-6.

for access to interexchange service.¹⁵⁰ West Virginia Consumer Advocate, for example, argues that consumers who live in rural areas and must place toll calls to obtain essential services especially require access to interexchange service.¹⁵¹ AirTouch, however, contends that universal service suppresses interexchange usage because, it argues, long distance rates rise as a result of IXC's contributions to universal service.¹⁵²

58. Equal Access to IXCs. Some parties favor supporting equal access to long distance service, i.e., the ability to access the long distance carrier to which a customer is presubscribed by dialing a 1+ number.¹⁵³ Ohio Consumers' Council asserts that consumers should have access to all available long distance carriers, but questions whether universal service support is required to provide access.¹⁵⁴ 360 argues that requiring eligible carriers to provide equal access to IXCs would preclude CMRS providers from receiving universal service support and would be contrary to congressional intent.¹⁵⁵

59. TRS. Many commenters favor universal service support for TRS,¹⁵⁶ while others argue that support should be limited to access to TRS.¹⁵⁷ Some parties recognize that TRS is currently supported through a separate TRS fund.¹⁵⁸

60. White Page Directories and Listings. Many commenters favor including a

¹⁵⁰ See, e.g., Florida PSC comments at 7; New Hope Tel. comments at 2-3; OITA-WITA comments at 3-5; Fred Williamson comments at 10-11.

¹⁵¹ West Virginia Consumer Advocate comments at 7. The arguments of commenters who favor providing universal service support for toll usage are discussed *infra*.

¹⁵² AirTouch comments at 13-14.

¹⁵³ See, e.g., AT&T comments at 12; Ardmore Tel. comments at 2; Bledsoe Tel. comments at 3; Blountsville Tel. comments at 2; LDDS comments at 8; Minnesota Indep. Coalition comments at 9; Missouri PSC comments at 6; TCA comments at 5; Wyoming PSC comments at 7.

¹⁵⁴ Ohio Consumers' Council comments at 13.

¹⁵⁵ 360 reply comments at 2, citing 47 U.S.C. § 332(c)(8) ("A person engaged in the provision of commercial mobile services . . . shall not be required to provide equal access to common carriers for the provision of telephone toll services.").

¹⁵⁶ See, e.g., Alaska PUC comments at 6; Michigan Consumer Federation comments at 21; Minnesota Indep. Coalition comments at 9; New York CPB comments at 6; Telec Consulting comments at 4.

¹⁵⁷ See, e.g., California PUC comments at 6; Cincinnati Bell comments at 4; Louisiana PSC comments at 3; Pennsylvania PUC comments at 6.

¹⁵⁸ See, e.g., AT&T comments at 13 n.17; NYNEX comments at 11 n.21.

standard white page directory listing and directory assistance among supported services.¹⁵⁹ Florida PSC argues, however, that eligible telecommunications carriers should be required to provide their subscribers with white page listings, but should not recover the cost from universal service support mechanisms.¹⁶⁰ Instead, Florida PSC suggests that telecommunications providers can sell "designer" white page listings to pay for the cost of producing directories.¹⁶¹

61. Directory Assistance. Some parties recommend that access to directory assistance be supported.¹⁶² New York CPB, for example, asserts that directory listings and services are widely deployed by telecommunications providers, are used by "virtually all telephone subscribers," are essential for access to the network, and provide public safety and health benefits, especially to users away from home.¹⁶³

62. Blocking Services. A few parties propose supporting 900 number blocking through universal service mechanisms.¹⁶⁴ Other parties favor providing universal service support for toll blocking or toll control¹⁶⁵ services.¹⁶⁶ Missouri PSC argues that toll blocking might increase subscribership levels by permitting those who have been disconnected due to unpaid toll bills to regain basic telephone service that would enable them to make and receive local calls and to receive toll calls.¹⁶⁷ Missouri PSC cites studies that, it argues, suggest that a

¹⁵⁹ See, e.g., AARP comments at 10; Blountsville Tel. comments at 2, Michigan Consumer Federation comments at 21; NTIA reply comments at 7; New York DPS comments at 12-13; Rural Iowa Indep. Tel. Ass'n comments at 2; SWBT comments at 8; Wyoming PSC comments at 7.

¹⁶⁰ Florida PSC comments at 7-8.

¹⁶¹ *Id.*

¹⁶² See, e.g., AARP comments at 10; Michigan Consumer Federation comments at 21; NTIA reply comments at 7; New York DPS comments at 12-13; SWBT comments at 8.

¹⁶³ New York CPB comments at 6.

¹⁶⁴ AARP comments at 10; Alaska PUC comments at 6; New York CPB comments at 6-7; Wyoming PSC comments at 7.

¹⁶⁵ With toll blocking, a subscriber voluntarily surrenders his ability to place toll calls over his subscriber loop. With toll control, a subscriber's long distance usage is capped at a certain dollar or minute-of-use amount per month. Both mechanisms are designed to enable subscribers to control their long distance service bills.

¹⁶⁶ See, e.g., Alaska PUC comments at 6; Benton comments at 2; GSA comments at 8; Indiana URC comments at 2-3; LDDS comments at 8-9; Missouri PSC comments at 6; PULP comments at 16-17 (noting that NYNEX currently provides voluntary toll blocking to all residents at no charge); RUS comments at 11.

¹⁶⁷ Missouri PSC comments at 6-7.

large number of individuals currently without phone service were disconnected due to unpaid toll bills.¹⁶⁸

63. Access to the Internet. Several parties argue that Internet access should be supported.¹⁶⁹ Other commenters, however, oppose allocating universal service support for Internet access.¹⁷⁰ Some parties advocate providing universal service support for local-dial up access to the Internet, so that consumers in rural areas do not have to pay for a toll call for access.¹⁷¹ Some parties, however, oppose providing support for services like Internet access, because, they contend, doing so would be contrary to congressional intent that only "telecommunications services" may be included in the definition of universal service.¹⁷²

64. Other services and functionalities. Commenters suggest providing universal service funding for the following services and functionalities: access to basic local directory assistance;¹⁷³ call tracing;¹⁷⁴ call waiting;¹⁷⁵ interoffice digital facilities;¹⁷⁶ equal access to SS7

¹⁶⁸ Missouri PSC comments at 6-7 (citing Field Research Corp., *Affordability of Telephone Service S-7, S-19 to S-20* (1993); Milton Mueller and Jorge Reina Schement, Rutgers University Project on Information Policy, *Universal Service from the Bottom Up: A Profile of Telecommunications Access in Camden, New Jersey* (1995); Chesapeake & Potomac Telephone Company, *Submission of Telephone Penetration Studies in Formal Case No. 850* (D.C. PSC, Oct. 1, 1993)).

¹⁶⁹ See, e.g., American Foundation for the Blind comments at 5; Bar of New York comments at 9-14; Community Colleges comments at 11; Iowa Utilities Board comments at 2; Michigan Consumer Federation comments at 20-21.

¹⁷⁰ See, e.g., MCI comments at 9; NYNEX comments at 12; LDDS reply comments at 9.

¹⁷¹ Alaska PSC comments at 5; Iowa Utilities Board comments at 2; Missouri PSC comments at 6.

¹⁷² ITA/EMA comments at 3, 5-10; Information Technology Industry Council comments at 4, 6-7, citing 47 U.S.C. § 254(c)(1) (universal service is "an evolving level of *telecommunications services* that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services.") (emphasis added). In addition, both ITA/EMA and ITI cite 47 U.S.C. sections 153(48) [sic] and 153(51) [sic] for the definitions of "telecommunications" and "telecommunications services." Because the new provisions were codified, these definitions are now found at 47 U.S.C. §§ 153(43) and 153(46), respectively.

¹⁷³ See, e.g., Governor of Guam comments at 9-10; Information Technology Industry Council comments at 3-4; Ohio Consumers' Council comments at 11-12; SWBT comments at 8; TCA comments at 5; AT&T reply comments at 18.

¹⁷⁴ AARP comments at 10; Minnesota Indep. Coalition comments at 9.

¹⁷⁵ Texas OPUC comments at 16.

¹⁷⁶ AARP comments at 10.

functionalities;¹⁷⁷ ISDN services;¹⁷⁸ interconnection among carriers;¹⁷⁹ reasonable toll usage;¹⁸⁰ carrier-provided customer support services;¹⁸¹ adequate line quality for facsimile and data transmission;¹⁸² end-to-end digital service;¹⁸³ telecommunications services for handicapped and disabled students and employees;¹⁸⁴ guaranteed functional performance requirements;¹⁸⁵ guaranteed continued power for telephone service in the event of a power outage;¹⁸⁶ no-cost repair of the network on the provider's side of the network demarcation point;¹⁸⁷ and number portability.¹⁸⁸

3. Discussion

65. In addition to the services proposed to be included within the general definition of universal service by the NPRM, the Joint Board recommends that access to interexchange service be included. We find that Congress was unequivocal in its intent that the Commission should include access to interexchange services when it provided "customers in all regions of the nation . . . should have access to telecommunications and information services, including

¹⁷⁷ AARP comments at 10; Blountsville Tel. comments at 3; NorTel reply comments at 2, 5-6.

¹⁷⁸ Alaska Tel. comments at 2-4 (arguing that supporting a lower level of functionality than ISDN would create a two-tiered telecommunications system that would separate those with access to data capabilities from those without such access); Matanuska Tel. Ass'n comments at 2; Southwest Virginia Future comments at 1; Dell Tel. reply comments at 4.

¹⁷⁹ AARP comments at 10.

¹⁸⁰ Michigan Consumer Federation comments at 20.

¹⁸¹ Louisiana PSC comments at 3 (supporting access to customer support services, including billing); Michigan Consumer Federation comments at 21 (advocating free calls to a carrier's office for requesting repairs, making billing inquiries and obtaining information about programs such as Lifeline).

¹⁸² See, e.g., Colorado PUC comments at 2; Michigan Library Ass'n comments at 6; RUS comments at 10 (asserting that voice grade service should allow data transmission at 28.8 kbps rates through modems); Wyoming PSC comments at 7.

¹⁸³ Wyoming PSC comments at 7.

¹⁸⁴ ACE comments at 6.

¹⁸⁵ Alaska Health comments at 2 (supporting "voice grade access to dial-up lines on the public switched network, with the ability to place and receive calls with a guaranteed functional transmission rate of 14.4 Kbps via modem").

¹⁸⁶ Colorado PUC comments at 2-4.

¹⁸⁷ New Jersey BPU comments at 2.

¹⁸⁸ AT&T reply comments at 18.

interexchange services."¹⁸⁹ In addition, we find that the majority of residential subscribers currently have access to interexchange service, consistent with the criterion of section 254(c)(1)(B). Moreover, the record in this proceeding supports our finding that access to interexchange service is essential for education, public health and public safety.¹⁹⁰ Customers who live in rural areas, especially, require access to interexchange service to reach medical and emergency services, schools, and local government. Although access may more properly be characterized as a functionality of the loop rather than a service, the record also supports the conclusion that access to interexchange service is demanded by a substantial majority of residential customers and is generally available.¹⁹¹ Further, we find that access to interexchange service is consistent with the public interest.¹⁹² Based on these considerations, and the strong support in the record, we recommend that access to interexchange service -- meaning the ability of a subscriber to place and receive interexchange calls -- be included as a supported service.¹⁹³

66. The Joint Board, however, recommends that access to interexchange service should not be defined, at this time, to include equal access to interexchange carriers. We acknowledge the importance of equal access to interexchange service in a competitive environment, but we conclude that equal access should not be supported because of the potential costs to wireless carriers involved in upgrading facilities and because wireless carriers are not currently required to provide equal access.¹⁹⁴

67. The Joint Board recommends including access to directory assistance, specifically, the ability to place a call to directory assistance, be included in the definition of universal service. Like access to interexchange service, access to directory service is a functionality of the loop. We are recommending support be provided for *access to* directory assistance, not the service itself. We agree with the numerous commenters who favor providing universal service support for access to directory assistance because it is a necessity for consumers to access "telecommunications and information services." Directory assistance provides consumers access to necessary information, such as government, business, and customer listings. Indeed, we believe that without the ability to access directory assistance,

¹⁸⁹ 47 U.S.C. § 254(b)(3).

¹⁹⁰ See 47 U.S.C. § 254(c)(1)(A).

¹⁹¹ See 47 U.S.C. § 254(c)(1)(B)-(C).

¹⁹² See AT&T reply comments at 18. See also 47 U.S.C. § 254(c)(1)(D).

¹⁹³ We do not recommend, however, support for interstate usage.

¹⁹⁴ See 47 U.S.C. § 332(c)(8) ("a person engaged in the provision of commercial mobile services . . . shall not be required to provide equal access to common carriers for the provision of telephone toll services").

consumers' access to other telecommunications and information services is greatly diminished. In considering the statutory factors contained in section 254(c)(1), we find access to directory assistance is essential for education, public health and safety. Although not a service *per se*, directory assistance is used by a substantial majority of residential customers, is widely available, and is consistent with the public interest, convenience and necessity.¹⁹⁵ The Joint Board, therefore, recommends that access to directory assistance be included in the definition of universal service, pursuant to section 254(c)(1). Therefore, we will refer to voice grade access to the public switched network, DTMF or touch-tone, single-party service, access to emergency service, access to operator service, access to interexchange service, and access to directory assistance as the "designated" or "core" services for universal service for purposes of section 254(c)(1).

68. Although the provision of "white page listings" received significant record support, we do not recommend that it be included it within the general definition of universal service. While we agree with the commenters that suggest that this is an important service that facilitates access to the telecommunications network, we do not consider white page listings to be within the 1996 Act's definition of "telecommunication services."¹⁹⁶ Therefore, white page listings should not receive universal service support. We agree with the Florida PSC that carriers have at their disposal the means to recover the costs of these services. Although we find that white page listings should not be included in the definition of universal service support, we strongly recommend that the states take the necessary and appropriate steps to ensure the continued availability of this fundamentally important offering.

69. We recommend that no additional services be included in the general definition of universal service at this time.¹⁹⁷ For example, although we recognize the integral role of TRS in the provision of universal telephone service, we agree with the commenters that state that universal service support is not necessary because the service is already supported through a separate fund.¹⁹⁸ We find that access to the Internet, to the extent that this implies non-toll access, is provided through voice-grade access to the public switched network. The Joint Board rejects the position of some commenters that the actual use of Internet services be supported. We find that the provision of Internet service does not meet the statutory definition of a "telecommunications service." In addition, we decline to support toll access to Internet providers. We predict, however, that increasing demand for Internet service will

¹⁹⁵ 47 U.S.C. § 254(c)(1)(A)-(D). See also Minnesota Indep. Coalition comments at 5.

¹⁹⁶ 47 U.S.C. § 153(46).

¹⁹⁷ We do, however, recommend that toll blocking be provided without charge for low income subscribers. For a further discussion of this subject and other recommendations regarding services for low income consumers, see *infra* section VIII.

¹⁹⁸ See, e.g., AT&T comments at 13 n.17.

result in broader accessibility of Internet service providers. This should have the effect of reducing or eliminating the need for customers in rural areas to place toll calls to obtain Internet service.¹⁹⁹

70. We further conclude that no other services proposed by commenters in the record substantially meet the criteria stated in section 254(c)(1). Moreover, we find that an overly broad definition of universal service might have the unintended effect of creating a barrier to entry for some carriers because, as discussed *infra*, carriers must provide each of the core services in order to be eligible for universal service support. Because the definition of universal service is evolving, however, we must, as the 1996 Act instructs, consider the definition again in the future.²⁰⁰

D. Feasibility of Providing Designated Services

1. Background

71. Section 214(e)(1)(A) requires eligible carriers to "offer the services that are supported by Federal universal service support mechanisms".²⁰¹ On July 3, 1996, the Common Carrier Bureau released a Public Notice to supplement the NPRM's requests for comment.²⁰² The Public Notice asked, *inter alia*, for comment on the effects on competition if a carrier is denied universal service support because it is technically infeasible for that carrier to provide one or more of the designated services.²⁰³

2. Comments

72. Carriers' Ability to Provide Designated Services. Several commenters representing various sections of the telecommunications industry maintain that the services proposed in the NPRM are so basic that no telecommunications provider will have difficulty providing them.²⁰⁴ Florida PSC, for example, maintains that requiring carriers to provide the

¹⁹⁹ See 47 U.S.C. §§ 3(46), 254(c)(1). See also SWBT reply comments at 4.

²⁰⁰ 47 U.S.C. § 254(c)(1).

²⁰¹ 47 U.S.C. § 214(e)(1)(A).

²⁰² Public Notice, *Common Carrier Bureau Seeks Further Comment on Specific Questions in Universal Service Notice of Proposed Rulemaking*, DA-96-1078 (rel. July 3, 1996) (Public Notice).

²⁰³ Public Notice at question 4.

²⁰⁴ See, e.g., BellSouth further comments at 7; Bell Atlantic further comments at 2; MFS further comments at 12; NCTA further comments at 2; Vanguard further comments at 3.

core services, or even additional services, would not be unduly burdensome or adversely affect competition.²⁰⁵ Some parties assert that because the 1996 Act permits carriers to provide services by resale, carriers are able to provide even those services that their facilities do not support.²⁰⁶

73. Some parties contend, however, that expanding the list of services might stifle competition if carriers generally are unable to provide services designated for universal service.²⁰⁷ Various parties argue, therefore, that universal service should be defined as narrowly as possible.²⁰⁸ Teleport contends that, by limiting the definition of universal service to those services that "have . . . been subscribed to by a substantial majority of residential customers" and "are being deployed in public telecommunications networks by telecommunications carriers," Congress has attempted to ensure that the definition of universal service remains competitively and technologically neutral.²⁰⁹ Vanguard argues that a narrow definition of services will promote competition because support will not be limited to only those carriers that can provide extensive services.²¹⁰ Vanguard asserts that a narrow definition of universal service will facilitate the addition of other services at a later time.²¹¹

74. Effect of Interconnection and Unbundled Elements Requirements. Some parties, including AT&T and ALTS, link the ability of competitive carriers to provide core services with the implementation of the 1996 Act's requirements related to interconnection²¹²

²⁰⁵ Florida PSC further comments at 7.

²⁰⁶ Century further comments at 9; NECA further comments at 4; NYNEX further comments at 5; Puerto Rico Tel. Co. further comments at 5; TCI further comments at 10; U S West further comments at 4-5. *See also* CompTel further comments at 8 (asserting that "the Joint Board should make clear that eligibility may not be denied simply because, for technical and economic reasons, the CLEC purchases ILEC elements necessary to provide core services."). Determining which carriers are eligible for universal service support is discussed further in section VI, *infra*.

²⁰⁷ *See, e.g.*, Ameritech further comments at 10; MCI further comments at 3; Time Warner further comments at 13-14.

²⁰⁸ *See, e.g.*, GCI further comments at 3; GTE further comments at 10; MCI further comments at 3; Time Warner further comments at 12; Vanguard further comments at 3.

²⁰⁹ Teleport further comments at 3 (*citing* 47 U.S.C. § 254(c)(1)(B) - (C)).

²¹⁰ Vanguard further comments at 4.

²¹¹ *Id.*

²¹² 47 U.S.C. § 251.

and access to unbundled elements.²¹³

Specifically, Citizens Utilities argues that competitive carriers have the right to acquire any or all of the network elements they need, at cost-based rates, from the incumbent LEC.²¹⁴ ALTS contends that, if the cost of access to the databases necessary for the provision of emergency services were set at rates that make it economically infeasible for competitive carriers to use the incumbent LEC's databases, then competitive carriers would be unable to provide access to emergency services.²¹⁵ Similarly, some parties argue that, if incumbent LECs deny new entrants access to unbundled elements, it may be technically infeasible for a new entrant to provide one or more of the core services.²¹⁶

75. Provision of Core Services and Eligibility. Some commenters argue that carriers that are unable to provide one or more of the core services should be ineligible to receive universal service support.²¹⁷ SWBT argues that Congress intended to limit universal service funding to "eligible telecommunications carriers" that are required to "offer the services supported by the Federal universal service support mechanisms. . . ."²¹⁸ Thus, SWBT contends, providing support for a carrier that does not offer all of the core services would be contrary to the language of the statute which, SWBT argues, clearly expresses the intent of Congress.²¹⁹ In addition, Ameritech asserts that competition would be harmed if a carrier that did not provide one or more core service was still eligible for support intended for core services, particularly when that carrier is competing with others that are providing core services "in accordance with the rules."²²⁰ Similarly, Minnesota Indep. Coalition contends that providing universal service support for a "partial provider" might raise the cost of full service providers by reducing their revenue bases.²²¹ BellSouth argues that "niche" providers might

²¹³ *Id.* See ALTS further comments at 1-2; AT&T further comments at 5.

²¹⁴ Citizens Utilities further comments at 4 (*citing* 47 U.S.C. §§ 251(c)(3), 252(d)(1)).

²¹⁵ ALTS further comments at 2.

²¹⁶ AT&T further comments at 5; MCI further comments at 3; MFS further comments at 12.

²¹⁷ *See, e.g.*, Ameritech further comments at 10; ITC further comments at 3; New York DOE further comments at 5; Puerto Rico Tel. Co. further comments at 5; RUS further comments at 4; SWBT further comments at 3; Sprint further comments at 3; Teleport further comments at 4; Time Warner further comments at 13; Vitelco further comments at 3; Washington UTC further comments at 5.

²¹⁸ SWBT further comments at 3 (*citing* 47 U.S.C. §§ 254(e), 214(e)(1)(A)).

²¹⁹ *Id.*

²²⁰ Ameritech further comments at 10.

²²¹ Minnesota Indep. Coalition further comments at 7.

choose not to provide all of the core services in a given area, and that these carriers should not be eligible for support.²²² ITC maintains that the impact on consumers who might be denied core services should serve as a reason against providing support for carriers that do not provide all the core services.²²³

76. Waivers. A few comments favor permitting carriers that are unable to provide one or more of the core services to apply for waivers in order to receive universal service support.²²⁴ For example, NENA argues that waivers should be granted so that a carrier's failure to offer a service that would be technically infeasible for that carrier to provide would not make the carrier ineligible for universal service support.²²⁵ NENA contends that, in the case of 911, infeasibility of providing access to emergency service could arise from a political determination that an emergency calling system is not needed or wanted in a particular area.²²⁶ In such an area, NENA argues, access to 911 should not be considered a core service.²²⁷ Similarly, PacTel asserts that carriers should be able to apply for waivers based on specific facts and circumstances that make it unable to provide one or more core service.²²⁸

77. PacTel also argues that geographic circumstances might prevent carriers serving a particular area from providing a core service.²²⁹ Accordingly, PacTel contends that the Commission could issue different standards relating to the provision of core services for different geographic areas.²³⁰ PacTel, however, asserts that, to receive support, every company serving a particular geographic area should be required to provide the same core services.²³¹ Similarly, Maine PSC contends that, because E911 is not available everywhere, its

²²² BellSouth further comments at 7.

²²³ ITC further comments at 3. *See also* Sprint further comments at 3.

²²⁴ *See, e.g.*, NENA further comments at 3. PacTel further comments at 12.

²²⁵ NENA further comments at 3.

²²⁶ *Id.*

²²⁷ *Id.*

²²⁸ PacTel further comments at 12.

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ *Id.*

absence should not disqualify carriers serving a particular area from receiving support.²³²

78. Transition Period. Some parties favor implementing a transition period to enable carriers to meet the universal service requirements and provide the core services within a reasonable time period.²³³ For example, GTE maintains that a transition period is necessary to permit some incumbent LECs to provide single-party service.²³⁴ Further, RTC argues that the 1996 Act requires the definition of universal service to evolve and, thus, at some time in the future, the definition of core services is likely to extend beyond the services carriers are capable of providing.²³⁵ RTC recommends that state agencies, in their capacity to determine eligible carriers under section 214(e), should determine whether carriers continue to receive high cost support while they are upgrading their networks in order to provide all universal services in an entire service area.²³⁶

3. Discussion

79. We generally agree with those commenters that argue that carriers designated as eligible telecommunications service providers must provide each of the services designated for support subject to certain exemptions as discussed below. We recommend that telecommunications carriers that are unable to provide one or more of these services should not receive universal service support unless exceptional circumstances exist.²³⁷ We conclude that conditioning a carrier's eligibility for support upon its provision of the core services will not impose an anti-competitive barrier to entry, as discussed *supra*.²³⁸ We agree with Teleport that the statutory principles for defining universal service are designed to ensure competitive and technological neutrality. There is no compelling evidence in the record that demonstrates that requiring eligible carriers to provide these services would unduly burden new competitors or non-wireline carriers. In addition, we agree with commenters observing that the 1996 Act

²³² Maine PSC further comments at 6.

²³³ See, e.g., Century further comments at 9-10; GTE further comments at 10; SWBT further comments at 4. See also USTA further comments at 7 (arguing that incumbent carriers should be given additional time to provide core services without losing universal service support, but that competing carriers must provide all core services before they are eligible for support).

²³⁴ GTE further comments at 10. See also SWBT comments at 8.

²³⁵ RTC further comments at 9-10.

²³⁶ *Id.*

²³⁷ As stated *supra*, we recommend that states have the discretion to provide for a transition period, for good cause, to allow carriers to make upgrades to provide single-party service.

²³⁸ See *supra* section IV.A.3.

facilitates the provision of services because it permits a telecommunications carrier to provide the supported services by using its own facilities in combination with resale of another carrier's services.²³⁹

80. A few commenters argue that it may not be feasible for competitive carriers to provide the designated services because incumbent LECs may set exorbitant rates for network elements or deny access to unbundled elements. We believe that these arguments are speculative given that section 252 requires network element charges to be based on cost and to be nondiscriminatory²⁴⁰ and section 251 requires incumbent LECs to provide requesting carriers "nondiscriminatory access to network elements on an unbundled basis . . . on rates, terms and conditions that are just, reasonable, and nondiscriminatory."²⁴¹

81. We recommend that the Commission not implement the general transition proposed by GTE, RTC, and others that would allow carriers to draw support from the universal service fund but provide only some of the services designated for universal service support.²⁴² Such a transition period would appear to be inconsistent with section 254(e) which states that "[a]fter the date on which Commission regulations implementing this section take effect, only an eligible telecommunications carrier . . . shall be eligible to receive" Federal universal service support.²⁴³ Moreover, we find that requiring some carriers to provide services while not imposing the same requirements on other carriers would be inconsistent with our recommended principle of competitive neutrality. We find little in the record that indicates that telecommunications carriers are generally unable to provide one or more of the recommended core services. A few commenters, however, maintain that some incumbent LECs are currently unable to provide single-party service. Although we find that single-party service is essential to modern life and to a modern telecommunications system, we recognize that exceptional circumstances may prevent some carriers from offering single-party service initially. Accordingly, as discussed *supra*, we recommend that state commissions, in their capacity to designate telecommunications providers that are eligible to receive universal service support, be permitted to grant an eligible carrier's request for a transition period after which the carrier must offer single-party service. Such a request will be granted only if the state commission finds exceptional circumstances warrant an exemption from this requirement.

²³⁹ 47 U.S.C. § 214(e)(1)(A).

²⁴⁰ 47 U.S.C. § 252(d)(1)(A)(i)-(ii).

²⁴¹ 47 U.S.C. § 251(c)(3).

²⁴² We note, however, that there will be a transition period leading up to the time the Commission's universal service rules take effect. See *infra* section VII.E.

²⁴³ 47 U.S.C. § 254(e).

82. In addition to our general conclusion that carriers must provide each of the designated services in order to receive support, we find that universal service support should be available in limited instances where a carrier is unable to provide a few specific services. For example, based on our analysis of E911, discussed *supra*, we conclude that access to E911 should be among those services supported by universal service mechanisms because, for example, it is "essential to . . . public safety" consistent with section 254(c)(1)(A). We realize, however, that not all carriers are currently capable of providing access to E911 and, in fact, as noted by NENA, not all communities have the facilities in place to provide E911 service. Nevertheless, we conclude that access to E911 should be supported to the extent that carriers are providing such access. Similarly, as discussed *infra*, we find that toll blocking or control services should be supported when provided to qualifying low-income consumers, to the extent that eligible carriers are technically capable of providing these services. Thus, we recommend that eligible carriers be required to provide all of those services we characterize as "designated" services, but we also recommend that the Commission support additional services such as E911 and toll limitation, to the extent eligible carriers are providing these important services.

83. Finally, we conclude that waivers should not generally be available to carriers that do not provide one or more of the designated services. Nevertheless, as discussed *supra*, the record supports the contention that some carriers may currently be unable to offer single-party service. Because section 214(e) requires eligible carriers to "offer the services that are supported by Federal universal service support mechanisms under section 254," we are unwilling to recommend that telecommunications providers be permitted to receive broad waivers from the requirement to provide the services we recommend designating for universal service support. As discussed *supra*, however, we recommend that state commission be permitted to grant a request for a transition to carriers that cannot currently provide single-party service if the circumstances warrant such a transition period.

E. Extent of Universal Service Support

1. Background

84. The 1996 Act states that "[c]onsumers in . . . high cost areas, should have access to telecommunications and information services. . . ." ²⁴⁴ The NPRM asks for comment regarding whether universal service support should be limited to carriers providing designated services to residential users or residential and single-line business users, or whether support should be provided for designated services provided to all users in high cost areas. ²⁴⁵

²⁴⁴ 47 U.S.C. § 254(b)(3).

²⁴⁵ NPRM at para. 24.

2. Comments

85. Support for Single Residential Connections. Those commenters that addressed the issue of the extent of universal service generally favor limiting universal service support to designated services carried on the initial line to residences.²⁴⁶ Washington UTC, for example, opposes supporting two or more single-party lines per residence.²⁴⁷ NTIA contends that federal universal service support should be targeted toward single-line residential service.²⁴⁸ GTE argues that a definition of "household" must be established if support is limited to primary residential lines so that carriers are not required to determine whether a customer sharing a house or apartment is a separate household.²⁴⁹

86. Support for Services Carried to Additional Residences. GTE opposes any attempt to restrict universal service support to designated services carried on lines to primary residences.²⁵⁰ According to GTE, it would be impractical to make such a distinction and, further, the record does not support this approach.²⁵¹

87. Support for Designated Services Carried to Businesses. Some commenters favor extending support to connections to businesses in high cost areas.²⁵² For example, Nat'l Ass'n of Dev. Orgs. argues that rural economic viability depends upon access to communications services; thus, it argues, support should be extended to multiple-connection businesses.²⁵³ Citizens Utilities argues that, if a proven need for support exists for business lines, a national affordability standard for businesses should be developed that is different from any affordability standard established for residential service.²⁵⁴

88. Several parties, in contrast, oppose providing universal service support for

²⁴⁶ See, e.g., Illinois CC comments at 5; NCTA comments at 6.

²⁴⁷ See, e.g., Washington UTC comments at 10. See also Ameritech comments at 8.

²⁴⁸ NTIA reply comments at 8-9.

²⁴⁹ GTE reply comments at 8-9.

²⁵⁰ GTE reply comments at 8.

²⁵¹ *Id.*

²⁵² See, e.g., Cincinnati Bell comments at 5; LDDS comments at 9-10; Montana Indep. Telecom. comments at 5; SWBT comments at 7-8; Staurulakis comments at 5; Telec Consulting comments at 4.

²⁵³ Nat'l Ass'n of Dev. Orgs. comments at 8-9.

²⁵⁴ Citizens Utilities comments at 7.

designated services carried to businesses.²⁵⁵ Florida PSC argues that the goal of promoting universal service relates to maximizing the number of households that have telephone service.²⁵⁶ NTIA maintains that the costs of telephone services are likely to be a small fraction of total operating costs for most businesses and, thus, affordability of service should not generally be a problem for business users.²⁵⁷ Florida PSC and NTIA assert that states should provide appropriate funding if they determine that businesses need support.²⁵⁸ West Virginia Consumer Advocate contends support should be limited to designated services provided to residences because, it asserts, even single-line businesses can take tax deductions for telephone services as a cost of doing business.²⁵⁹ MCI opposes extending universal service support to businesses, because, it argues, supporting business lines would cause the level of support to grow excessively.²⁶⁰

3. Discussion

89. We find that support for designated services provided to residential customers should be limited to those services carried on a single connection to a subscriber's principal residence.²⁶¹ We find that supporting one connection per residence is consistent with section 254(b)(3), which states that access to services for low income consumers and those in rural, insular and high cost areas should be reasonably comparable to that available in urban areas.²⁶² We conclude that support for a single residential connection will permit a household complete access to telecommunications and information services. All supported services, including access to emergency services, would be available to a household by providing support for this residential connection. The Joint Board, however, declines at this time to provide support for other residential connections beyond the primary residential connection. Support for a second connection is not necessary for a household to have the required "access" to

²⁵⁵ See, e.g., AT&T comments at 13; Ameritech comments at 8; LCI comments at 3 (stating that "universal service support has always been limited to baseline, residential services and the 1996 Act provides no indication that Congress intended otherwise."); Western comments at 9.

²⁵⁶ Florida PSC comments at 7.

²⁵⁷ NTIA reply comments at 9.

²⁵⁸ Florida PSC comments at 7; NTIA reply comments at 9.

²⁵⁹ West Virginia Consumer Advocate comments at 8.

²⁶⁰ MCI comments at 9. See also NTIA reply comments at 9.

²⁶¹ In light of our recommended principle of competitive neutrality, we will hereinafter refer to "connections" rather than "lines."

²⁶² 47 U.S.C. § 254(b)(3).

telecommunications and information services.²⁶³ Moreover, the statutory language does not provide any guidance for determining what, if any, uses of a second connection are consistent with the goals of universal service. Nor does the record provide sufficient basis for supporting second residential lines. GTE contends that carriers will have difficulty determining whether a second connection to a residence is a household's second connection or whether the residence is shared by two or more households. It would appear, however, that carriers can use subscriber billing information to determine the number of households at a given address. Accordingly, we conclude that eligible carriers should receive support for designated services carried on the initial connection to a customer's primary residence.

90. We are unpersuaded that universal service support should be extended to second residences in high cost areas. We conclude that the consumer benefits that result from support should not be extended to second homes, which may not be occupied at all times. There is no evidence that the additional cost of supporting second or vacation residences is justified in light of the presumption that owners of these residences can afford to pay rates that accurately reflect the carrier's costs to provide services carried on connections to second residences.

91. We find that designated services carried to single-connection businesses in rural, insular and other high cost areas should be supported by universal service mechanisms, although we find that a reduced level of support may be appropriate. We find general similarities between residential and single-line business customers. Both single-line business and residential subscribers require access for health, safety and employment reasons. Moreover, like residential subscribers, most single-line businesses have few or no competitive options for local telecommunications service. We disagree with Nat'l Ass'n of Dev. Orgs. that support should be extended to multiple-connection businesses. We note that the Commission has, in the past, elected to treat single-line businesses like residential customers, that is, differently from multiple-line businesses.²⁶⁴ In one instance, the Commission, finding that small businesses lack the ability to use alternatives to the public switched network that are available to large corporations, held that the customer line charges should be the same for single-line business and residential customers.²⁶⁵ We determine that a distinction between single-connection and multiple-connection business is likewise appropriate for universal service purposes. The cost of service is unlikely to be a factor that would cause a multiple-connection business not to subscribe to telephone service. For small, single-connection

²⁶³ *Id.* See also 47 U.S.C. § 254(b)(2) (promoting "access to advanced services").

²⁶⁴ See *In the Matter of MTS and WATS Market Structure*, Memorandum Opinion and Order, 101 FCC 2d 1222 (1985) (determining that all single-line subscribers, whether residential or business, should pay the same SLC).

²⁶⁵ *Id.*

businesses in high cost areas, however, the price of telephone service may be prohibitive without support. Therefore, we recommend making universal service support available for designated services carried to single-connection businesses in high cost areas.

92. We conclude, however, that designated services carried to businesses subscribing to only one connection should not receive the full amount of support designated for residential connections in high cost areas. We agree with Citizens Utilities that, for business connections, a standard different from that applied to residential connections for determining support should be established. We recommend initially supporting the designated services carried on business connections in a high cost area at a lower level than that provided for residential connections in the same area. As discussed, *infra*, we recommend that the Commission use a benchmark based on the revenue generated per line to determine the amount of support carriers should receive.²⁶⁶ Under this recommended approach, eligible carriers would receive less support for serving single-connection businesses than they would for residential service because business rates are higher than residential rates.²⁶⁷ Moreover, we find that providing support for designated services carried to single-connection businesses in high cost areas at a reduced level is not inconsistent with the 1996 Act. We note that, as competition develops, it may be unnecessary to provide even this reduced support for services carried on the initial connection of businesses in high cost areas.

F. Quality of Service

1. Background

93. The 1996 Act requires that "quality services should be available at just, reasonable and affordable rates."²⁶⁸ Accordingly, the NPRM asked for comment on how the Commission can assess whether quality services are being made available.²⁶⁹ In particular, the NPRM sought comment on the utility of performance-based measurements to evaluate whether this congressional objective is being met.²⁷⁰ Further, the NPRM stated that the Commission is disinclined to prescribe technical standards for telecommunications carriers or

²⁶⁶ See *infra* section VII.C.

²⁶⁷ As discussed in greater detail in section VII.C, *infra*, we recommend that the amount of support be derived from calculating the difference between the cost of providing service and the benchmark amount.

²⁶⁸ 47 U.S.C. § 254(b)(1).

²⁶⁹ NPRM at para. 4.

²⁷⁰ *Id.*

other service providers.²⁷¹ Rather, the NPRM stated that the Commission preferred to let affected entities (such as IXC's, LEC's, equipment manufacturers, and customers) develop technical and performance standards without direct intervention from the Commission, unless necessary.²⁷² The NPRM, expressing the Commission's preference for encouraging existing standard-setting bodies to discuss and establish relevant technical standards, noted that there are currently several industry bodies that address standards for various aspects of communications networks.²⁷³

94. The NPRM also sought comment on whether, in implementing the congressional mandate to ensure that "quality services" are available, it would be useful to collect and publish certain basic information regarding technical performance levels of carriers subject to the Commission's rules.²⁷⁴ The NPRM noted that providing customers with easy access to service quality information could facilitate comparisons between the performance levels of various telecommunications carriers and could potentially create a market-based incentive for carriers to provide quality services.²⁷⁵ In addition, noting that competition will probably not develop in a uniform fashion throughout the Nation, the NPRM sought comment on whether it is necessary to obtain data that could be used by the public, regulators, and regulated entities to monitor service quality performance from carriers, particularly those carriers that serve rural areas and are not currently subject to the Commission's existing service quality monitoring program.²⁷⁶ The NPRM also emphasized that the collection and publication of these data should entail the least possible cost to the companies involved and, accordingly, solicited comment on whether industry organizations or state commissions already collect the information that should be contained in these performance reports.²⁷⁷ The NPRM also asked whether it would be reasonable to rely upon such existing information rather than extending the Commission's reporting requirements to all carriers.²⁷⁸ Commenters were also asked to estimate the potential costs associated with these various proposals for collecting performance information, in accordance with the 1996 Act's mandate that support

²⁷¹ NPRM at para. 68.

²⁷² *Id.*

²⁷³ *Id.* (referring to the American National Standards Institute Committee T-1, Electronic Industry Association and Telecommunications Industry Association).

²⁷⁴ NPRM at para. 69.

²⁷⁵ *Id.*

²⁷⁶ *Id.* (citing 47 C.F.R. §§ 43.21-22).

²⁷⁷ *Id.*

²⁷⁸ *Id.*

mechanisms should be "specific, predictable and sufficient."²⁷⁹ Finally, the NPRM sought comment on whether the Commission should take action at some fixed date to evaluate the need for continuing performance reports.²⁸⁰ The NPRM requested that the Joint Board address in its recommended decision all of the issues raised in the NPRM with respect to monitoring of telecommunications services.²⁸¹

2. Comments

95. Assessing Existing Service Quality. As a preliminary matter, some parties maintain that high quality services currently exist, largely due to existing universal service support.²⁸² A few commenters, however, contend that LECs operating under price cap formulas are motivated to reduce costs to the extent that lower service quality often results.²⁸³ Harris argues that telephone customer service indicators should continue to be used to assess service quality.²⁸⁴ ACTA maintains that the concept of quality of service must incorporate service provided by one carrier to other carriers, such as underlying service provided by carriers to resellers and by access carriers to IXC.²⁸⁵

96. Quality of Service Standards. Some parties generally support the imposition of service quality standards on telecommunications providers.²⁸⁶ GCI, for example, argues that the Commission should adopt certain quality standards for core services including an evaluation of valid complaints filed by consumers and customers (such as IXCs) and the amount of time taken to fill customer service orders.²⁸⁷ In addition, International

²⁷⁹ *Id.* (citing 47 U.S.C. § 254(b)(5)).

²⁸⁰ NPRM at para. 70.

²⁸¹ *Id.*

²⁸² *See, e.g.*, NECA comments at 3.

²⁸³ *See* International Communications Ass'n comments at 2; Michigan Consumer Federation comments at 5; NASUCA comments at 8.

²⁸⁴ Harris comments at 17-18 (noting that current methods of evaluating customer service rely on engineering and customer service objectives such as central office blocking, time to clear out-of-service reports, customer service call answer times, operator service call answer times, call completion rates, trouble reports and commission complaints).

²⁸⁵ ACTA comments at 2.

²⁸⁶ *See, e.g.*, CWA comments at 6; GCI comments at 7; NTIA reply comments at 7 n.13.

²⁸⁷ GCI comments at 7.